Understanding Chemotherapy
A guide for people with cancer, their families and friends

Understanding Chemotherapy is reviewed approximately every two years. Check the publication date above to ensure this copy of the booklet is up to date. To obtain a more recent copy, phone the Cancer Council Helpline on 13 11 20.

Acknowledgements
We thank the reviewers of this booklet: Associate Professor Stephen Della-Fiorenza, Director, Macarthur Cancer Therapy Centre, Department of Medical Oncology, Campbelltown Hospital; Frances Bellemore, Cancer Information Consultant, Cancer Council NSW Helpline; Vivienne Freeman, Clinical Nurse Consultant, Oncology, Royal North Shore Hospital; Adele Miller, Consumer; Sharyn Owen, Consumer, Cancer Voices; Mark Wong, Staff Specialist, Medical Oncology, Westmead and Blacktown Hospitals, Clinical Senior Lecturer, University of Sydney.

We would like to thank the health professionals and consumers who have worked on previous editions of this title. We also acknowledge Cancer Council Victoria for permitting its illustrations on pages 4–5 to be adapted for this booklet.


Note to reader
Always consult your doctor before beginning any health treatment. This booklet is intended as a general introduction to the topic and should not be seen as a substitute for your doctor’s or health professional’s advice. However, you may wish to discuss issues raised in this booklet with them. All care is taken to ensure that the information in this booklet is accurate at the time of publication.

Cancer Council New South Wales
Cancer Council is the leading cancer charity in NSW. It plays a unique and important role in the fight against cancer through undertaking high-quality research, advocating on cancer issues, providing information and services to the public and people with cancer, and raising funds for cancer programs. This booklet is funded through the generosity of the people of NSW. To make a donation to help defeat cancer, visit Cancer Council’s website at www.cancercouncil.com.au or phone 1300 780 113.
Introduction

This booklet has been prepared to help you understand more about chemotherapy, one of the main treatments for cancer.

_Understanding Chemotherapy_ may help you cope better and assist you to make decisions about your treatment.

Chemotherapy can produce different reactions in different people. Some people will have no side effects, others may have a few. Reactions can also vary from one chemotherapy treatment period to the next. However, many side effects can be controlled or reduced.

We cannot advise about the best treatment for you. You need to discuss this with your own doctors. However, we hope this information will answer some of your questions and help you think about the questions you want to ask your doctors.

If you find this booklet helpful, pass it on to your family and friends, who may also find it useful. The booklet does not need to be read from cover to cover – just read the parts that are relevant to you.

Some medical terms used in this booklet, which may be unfamiliar, are explained in the glossary.

If you’re reading this booklet for someone who doesn’t understand English, contact the Cancer Council Helpline on 13 11 20 for services available in different languages (see page 48).
What is cancer?

Cancer is a disease of the cells, which are the body’s basic building blocks. Our bodies constantly make new cells: to help us grow, to replace worn-out cells, or to heal damaged cells after an injury.

Normally, cells grow and multiply in an orderly way, but sometimes something goes wrong with this process and cells grow in an uncontrolled way. This uncontrolled growth may result in abnormal blood cells or may develop into a lump called a tumour.

A tumour can be benign (not cancer) or malignant (cancer). A benign tumour does not spread outside its normal boundary to other parts of the body. However, if a benign tumour continues to grow at the original site, it can cause problems by pressing on nearby organs.

A malignant tumour is made up of cancerous cells that grow out
of control and are able to spread to other parts of the body. When it first develops, a malignant tumour may not have invaded nearby tissue. This is known as a cancer in-situ (carcinoma in-situ) or localised cancer. As the tumour grows, it may invade surrounding tissue, becoming invasive cancer.

Cancers grow their own blood vessels in a process known as angiogenesis. This allows the cancer cells to get a direct supply of oxygen and other nutrients.

Sometimes cells move away from the original (primary) cancer site and spread to other organs and bones. When these cells reach a new site, they may continue to grow and form another tumour at that site. This is called a secondary cancer or metastasis.

A metastasis keeps the name of the original cancer. For example, breast cancer that has spread to the liver is still called breast cancer, even though the person may be experiencing symptoms caused by cancer cells in the liver area.
Q: What is chemotherapy?
A: Chemotherapy uses drugs to kill or slow the growth of cancer cells. Chemotherapy drugs are also called cytotoxics.

There are many different types of chemotherapy drugs. Sometimes only one drug is used but often two or more drugs are given at the same time. This is called combination treatment.

Chemotherapy drugs reach cancer cells in most parts of your body through the bloodstream. The drugs will also affect healthy cells in your body, causing side effects. Most side effects are temporary and there are ways to reduce or manage them (see Managing side effects on page 16).

Q: Why have chemotherapy?
A: Chemotherapy is used for several reasons.

Cure: Some cancers can be cured by chemotherapy on its own or combined with other treatments, such as surgery and radiotherapy.

To help other treatments: Chemotherapy can be given either before or after the other treatments. It may be used before your main treatment, to make a cancer smaller so the treatment is more effective (neo-adjuvant therapy), or after the main treatment to stop the growth of remaining cancer cells (adjuvant therapy).

Relief of symptoms: Sometimes it is not possible to cure the cancer. Chemotherapy can be used to relieve symptoms – this is called palliative treatment.
Q: Are there other treatment options?
A: Most cancers are treated by chemotherapy, radiotherapy (x-ray treatment) or surgery. Other treatments, such as hormone therapy, can also be used for some types of cancer. Treatments are used either alone or in combination.

Your treatment depends on several factors, including:
• the type of cancer you have
• where it began
• whether it has spread to other parts of your body
• your general health, and your wishes.

Q: What are targeted therapies?
A: Some types of chemotherapy called targeted therapies may be available. Targeted therapies attack specific weaknesses of cancer cells while sparing healthy cells. Two types of targeted therapies are drug therapies and immunotherapies.

Drug therapies
There are several types of targeted drug therapies for cancer.

Angiogenesis inhibitors: For cancer cells to grow and spread from their primary site to other areas of the body, they need to make their own blood vessels. Drugs known as angiogenesis inhibitors attack developing blood vessels so cancer cells can’t grow and spread.

Enzyme inhibitors: These drugs may block certain proteins or enzymes that tell cancer to grow. They are sometimes called small molecule drugs.

Apoptosis-inducing drugs: Apoptosis is a word that means cell death. These drugs target the part of the cancer cell that tells it when to die.
Side effects of targeted therapy drugs may be different to those of standard chemotherapy. For example, you may have fevers, allergic reactions, rashes, diarrhoea and blood pressure changes. You may be given medication to reduce your side effects.

**Immunotherapies**
Immunotherapies (also called biological therapies) strengthen the immune system so it finds and kills cancer cells. There are two types of immunotherapy.

**Active immunotherapies:** Therapies that stimulate your immune system to fight infection and disease. You might be given a vaccine to make your body produce proteins (antibodies) to fight cancer.

**Passive immunotherapies:** Using lab-made processes to get your immune system to fight cancer. For example, antibodies in a laboratory can be tailor made to interfere with a specific function of cancer cells. The antibodies may target molecules promoting cancer growth (called growth factors).

Not all cancers respond to targeted therapies, and these therapies may only be available for people in clinical trials (see page 34). Talk to your doctor for more information.

**Q: Where will I have treatment?**
**A:** You may have chemotherapy as an outpatient during day visits to a hospital or clinic without needing to stay overnight. Sometimes an overnight stay is needed for a couple of days. Some people may be able to have chemotherapy at home.
Q: How long will it last?

A: How often and how long you have chemotherapy will vary depending on the type of cancer and the drugs used. You may have chemotherapy daily, weekly or monthly for several months to a year.

Each chemotherapy session is called a cycle, and each cycle is followed by a rest period. This allows your normal cells to repair themselves and your body to regain its strength. Your treatment may be delayed if your body needs more time to recover.

Your doctor will discuss your treatment plan, including timeframes, with you.

Chemotherapy is time consuming

When you have chemotherapy you may spend a lot of time waiting, usually in hospitals: waiting for the doctor, for blood tests, for the results of blood tests, for your drugs to be prepared and for the drugs to be given.

Reading a book or magazine, doing crosswords, listening to music or talking to a companion can help pass the time. You might like to write or draw in a journal, meditate or practise some relaxation techniques. Take water and snacks in case there are long waiting times.

At first, it may be frightening seeing people who are sick due to cancer or their treatment, and you may not wish to identify with them. But another person having chemotherapy can acknowledge your shared experience with just a glance that can help you both cope. Many people find support from the other people who are receiving chemotherapy at the same time as them.
Q: How is chemotherapy given?

A: Your medical team will talk to you about the type of chemotherapy you will have and how it will be given.

Intravenous chemotherapy: Most commonly, chemotherapy drugs are given through a device called a tube or line that is inserted into a vein (intravenously or IV).

- A cannula is a small plastic tube that is inserted with a needle into a vein. It will be placed in your arm or in the back of your hand and removed when treatment ends.

- A central venous access device (CVAD) is a type of thin plastic tube that remains in your vein throughout the course of treatment. Blood for testing can sometimes be taken through this tube. Common types of CVADs include:
  - central line – inserted into your chest or neck
  - Hickman line – inserted into your chest
  - peripherally inserted central catheter – inserted into your arm
  - port-a-cath (port) – small device with an opening (port) just under the skin on your chest or arm.

Having intravenous chemotherapy can take a few minutes, several hours or days.

All tubes or lines should be kept clean to prevent infection or blockage. A nurse may visit you at home to clean, dress and flush your line, or you may go to a clinic. This may happen on a weekly to monthly basis.

A line doesn’t cause pain or discomfort if it is properly placed and cared for, although you will be aware of it. Tell your doctor or nurse immediately if you have pain, discomfort, redness or swelling around the line.
Intravenous chemotherapy at home

Some people are able to have their chemotherapy at home using a portable pump. The pump is programmed to give the prescribed amount of chemotherapy over a specified period.

A chemotherapy pump can be carried in a bag or belt holster. It is usually attached to a central line.

The nurses at the clinic or hospital can show you how to care for the pump.

Other ways of having chemotherapy: There are other methods of having chemotherapy, but your options will depend on what is available and what your doctor recommends. Some people may have one of the following types of chemotherapy:

- tablets
- a cream applied onto the skin
- injection into a muscle or under the skin
- injection into the fluid around the spine, an artery or the outer lining of the lungs or heart
- injection directly into the tumour, into your abdominal area (peritoneum) through a port, or into an organ such as the bladder or liver.
Q: What are the safety precautions?

A: Some people worry about the safety of their friends and family during chemotherapy treatment. Whether you have chemotherapy at home or in hospital, your carers and family will need to take precautions to avoid exposure to the drugs.

Your family and friends, including children, can visit you while you’re having chemotherapy. The chemotherapy won’t harm them because they should not have any direct contact with the drugs.

If people without cancer come into direct contact with chemotherapy drugs, they may be harmed. See the opposite page for a list of safety measures you should take at home.

When you are receiving chemotherapy, you will notice that the oncology nurses and doctors wear gloves, masks, goggles and gowns. This clothing reduces their risk of exposure to the drugs as they prepare the chemotherapy and give it to patients. After treatment is over, these items are disposed of in special bags or bins.

You may be more prone to infections while you are receiving chemotherapy, so ask your doctor or nurse if family members or friends with an infectious illness, such as a cold or the flu, should wait until they are well before visiting. See page 27 for more information.

After you have had chemotherapy, the drugs may remain in your body up to a week after treatment. It is possible for these drugs to be passed into urine, stools and other body fluids such as vomit, semen and breast milk. Care needs to be taken so that other people are not exposed to the drugs through contact with your body fluids.
Chemotherapy safety at home

Most hospitals recommend that patients follow the guidelines below when they have chemotherapy to reduce the risk of exposure to drugs. If you have any specific concerns, discuss them with your oncologist.

- After using the toilet, flush it using the full flush for a week following chemotherapy.
- Wear rubber gloves when handling clothing or bed sheets soiled with vomit or any other body fluids. To dispose of used gloves, seal them in a plastic bag and put it in the bin.
- Separate soiled items into a separate load for washing. Choose a normal cycle on the appropriate fabric setting.
- Don’t crush or cut chemotherapy tablets. If you can’t swallow a tablet whole, talk to your doctor.
- Wash skin with soap and water if chemotherapy spills on it. Contact the hospital if any redness or irritation caused by the spillage doesn’t clear up within the hour.
- Store chemotherapy tablets, capsules or injections as directed by your doctor or pharmacist. Keep them out of reach of children.
- Protect your partner from your body fluids by using a condom or a female condom if you have sex within 48 hours of a treatment session. Avoid pregnancy (see page 31).
- If you had a baby before starting chemotherapy, you will not be able to breastfeed.
**Q: Does chemotherapy hurt?**

**A:** Chemotherapy drugs are constantly being improved to give you the best possible results and reduce side effects.

Having intravenous chemotherapy may feel like having blood taken. If you have a cannula, only the initial injection should hurt. It should not feel painful if you have a central venous access device (see page 10). If you feel burning, coolness, pain or any other unusual sensation where the line enters your body, or if you have tenderness or redness over the injection site, tell your doctor or nurse immediately.

**Fear of chemotherapy**

It’s natural to worry about the side effects of chemotherapy. You may have heard stories about chemotherapy from your family and friends. Remember that other patients may have been prescribed different drugs, and each person reacts differently to treatment. If you are anxious about how chemotherapy will affect you, talk to your doctor or a counsellor.

**Q: How do I know treatment is working?**

**A:** After a few cycles of chemotherapy, your doctor may order several medical tests and examinations. These tests will show if the cancer has shrunk or disappeared. It will be a great relief if you learn that the cancer has disappeared, but it may be several years before you are considered cured. This is because sometimes cancer can come back to the same place or grow in another part of the body.

Adjuvant chemotherapy is often used to prevent a recurrence, so it may not be possible to tell if this treatment has been effective for a few years. If chemotherapy is being given as palliative treatment, the relief of symptoms will tell you if the treatment has worked.
**Q: Which health professionals will I see?**

**A:** Health professionals who may care for people having chemotherapy include:

<table>
<thead>
<tr>
<th>Health professional</th>
<th>Job description</th>
</tr>
</thead>
<tbody>
<tr>
<td>medical oncologist</td>
<td>specialist who prescribes and coordinates the course of chemotherapy</td>
</tr>
<tr>
<td>radiation oncologist</td>
<td>specialist who prescribes and coordinates the course of radiotherapy, which is sometimes used with chemotherapy</td>
</tr>
<tr>
<td>registrar</td>
<td>a qualified doctor undergoing additional training to be a specialist (for example as a medical oncologist or radiation oncologist)</td>
</tr>
<tr>
<td>nurses</td>
<td>give the course of treatment and support and assist you through all stages of your treatment</td>
</tr>
<tr>
<td>cancer nurse coordinator/clinical nurse consultant</td>
<td>coordinates your care and liaises with different specialist providers of care</td>
</tr>
<tr>
<td>haematologist</td>
<td>specialises in treating cancers of the blood, bone marrow and lymphatic system</td>
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<tr>
<td>dietitian</td>
<td>recommends an eating plan to follow while you are in treatment and recovery</td>
</tr>
<tr>
<td>social worker, physiotherapist and occupational therapist</td>
<td>link you to support services and help you to resume your normal activities</td>
</tr>
<tr>
<td>psychologist and psychiatrist</td>
<td>speak with you and your family about how to manage the stress of diagnosis and treatment.</td>
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Managing side effects

The most important effect of chemotherapy is that it kills cancer cells. However, chemotherapy can also affect normal cells and this may cause side effects. This chapter discusses the most common side effects people experience and offers suggestions to help manage them.

Side effects vary greatly. Some people will have no side effects, others will experience a few. Reactions vary from person to person, according to the type of drugs used, and from one treatment period to the next.

Side effects usually start during the first few weeks of treatment. Fortunately, most are temporary and can be managed during treatment.

The type and severity of any side effects is not a sign of the treatment’s success. It is best to talk to your doctor or nurse before your treatment begins about the side effects you should watch out for or report, and who to contact out of hours if you have any immediate concerns.

Tell your doctor about other therapies

It is important to tell your doctor if you plan to take any over-the-counter medications, home remedies or complementary therapies. Some of these medicines might worsen your side effects or affect how chemotherapy works in your body. For example, the herb St John’s Wort may reduce the effectiveness of some chemotherapy drugs.
Feeling tired and lacking energy

Feeling tired and lacking energy (fatigue) is the most common side effect of chemotherapy. Fatigue can include feeling exhausted, tired, sleepy, drowsy, confused or impatient.

Fatigue can appear suddenly and rest may not relieve it. You might also continue to feel tired for weeks or months after a treatment cycle ends.

Tips

• Save your energy. Help your body recover by doing less and resting more.

• Let people help you. Family, friends and neighbours may want to assist, but they may feel unsure about what to do. They can offer practical help with tasks such as shopping, child-care, driving and housework.

• Take a few weeks off work during or after your chemotherapy, or work fewer hours. You may be able to work from home. Some people feel well enough to continue to work full time and organise treatment appointments to suit their work hours.

• Do light exercise, such as walking, and keep up with your normal exercise routine if it’s approved by your doctor. Don’t start any new exercise regimes until you’ve fully recovered from treatment.

• Try to get more sleep at night and take naps during the day if you can.

• If you aren’t sleeping well, tell your health care team. Don’t take any pills or medication unless they are prescribed, as they may react badly with your chemotherapy treatment.

• Try to eat a healthy, well balanced diet. If you have mouth sores or nausea, be flexible about your meals.
Mouth sores
Some chemotherapy drugs can cause mouth sores such as ulcers or infections. This is more likely if you have had or are having radiation to the head, neck or chest, or if you have dental or gum problems. Ask your doctor or nurse whether you need to take extra care.

If you notice any change in your mouth or throat, such as sores, ulcers or thickened saliva, or if you find it difficult to swallow, contact your doctor.

Discuss any dental problems with your doctor. If you need any dental work, tell your dentist you are having chemotherapy.

Tips
- Use a soft toothbrush to clean your teeth twice a day. You may be given a special mouthwash to help prevent mouth infections.
- Don’t use commercial mouthwashes containing alcohol as they may dry out or irritate your mouth.
- Rinse your mouth with a teaspoon of bicarbonate of soda or salt in a glass of warm water at least four times a day. Bicarbonate mouthwash helps keep the mouth clean and salt mouthwash helps heal mouth sores.
- Sometimes sucking on ice while an infusion (drip) is being given can help minimise mouth ulcers.
- Sip fluids, especially water, and eat moist foods such as casseroles if you have a dry mouth. Moisten foods with butter or sauces. It may also help to suck on frozen pineapple or chew gum.
- Blend foods to make them easier to eat.
- Eat soups and ice-creams.
- Avoid spicy or acidic foods as these can aggravate mouth sores.
Loss of appetite, nausea or vomiting

It is common for your appetite to change when you are going through chemotherapy. Sometimes you may not feel hungry, or you may not enjoy the foods you used to like.

Be flexible about your meals. If you feel hungrier at breakfast time, have your main meal then and a light meal (such as muesli or cereal) at a time when you feel less like eating. Eating well will help you recover sooner and cope better with the treatment and its side effects.

Not everyone feels sick (nauseous) after chemotherapy, but if nausea does occur, it usually starts a few hours after treatment and may last for many hours. Sometimes nausea may be accompanied by vomiting or retching. If you have vomited a lot, try to keep your fluids up so that you don’t get dehydrated.

“At first I couldn’t think about eating without thinking about throwing up. Drinking ginger beer helped control the nausea.”

Anti-nausea medication can help. This medicine can be taken before, during or after chemotherapy treatment. It may be available as tablets or wafers (which are dissolved under the tongue), in liquid form so it can be added to the drip, or as a suppository. Suppositories are placed in the rectum, where they dissolve. Check with your doctor or nurse whether it is safe to use this type of medication.

You may be given anti-nausea tablets to take at home. These are best taken regularly.
It may take some time before you find an anti-nausea medication that works for you, so let your nurse or doctor know early on if your symptoms aren’t being relieved. If you still feel nauseous after a few days, or are vomiting for more than 24 hours, contact your doctor.

- Eat a light meal before your treatment (e.g. soup and dry biscuits) and drink as much fluid as possible.
- Drink small amounts more often rather than large drinks after treatment. Try soda water, dry ginger ale or weak tea. Eating ice cubes, ice-blocks or jellies can also help to increase your fluid intake.
- Avoid foods that usually upset your stomach.
- Eat small, frequent snacks instead of large meals. Try to eat when you are hungry.
- Eat slowly and chew well to help you digest your food better.
- Eat dry toast or crackers – they often help.
- Take it easy after eating a meal.
- Try breathing deeply through your mouth if you feel like you’re going to vomit.
- Prepare meals between treatments and freeze them for the days you don’t feel like cooking.
- Try to avoid odours that bother you, such as cooking smells, perfume or smoke.
- Ask your doctor for medication to stop you feeling sick.
- For more tips, call the Helpline on 13 11 20 for a copy of the Cancer Council’s booklet Food and Cancer. Your hospital may also have a dietitian whom you can speak to.
Constipation or diarrhoea
Some chemotherapy drugs, pain relief medicines and anti-nausea drugs can cause constipation or diarrhoea.

If you have constipation for more than a couple of days, let your doctor or nurse know. Your medication may need to be changed or other medication may be given to relieve it.

If you have diarrhoea, it can be treated with medication at home. If the diarrhoea becomes severe, it may cause dehydration and you may need to be admitted to hospital. Tell your doctor or nurse before your next treatment session if you have had diarrhoea.

After a bout of constipation or diarrhoea, eat a balanced diet with fresh fruits, vegetables, wholegrain bread and pasta.

- If you have constipation, eat more high-fibre foods, such as wholegrain bread and pasta, bran, fruit and vegetables.
- Sometimes drinking fruit juice can help ease constipation. Try prune, apple or pear juice.
- Drink plenty of fluids, both warm and cold. This will help loosen the bowels if you have constipation and replace the fluids lost through diarrhoea.
- Get some light exercise.
- Eat small, frequent snacks instead of big meals.
- If you have diarrhoea, avoid spicy foods, coarse wholegrain products, fatty or fried foods, rich gravies and sauces, and raw fruit or vegetables with skins or seeds. Instead, try snacking on clear broth and toast, biscuits and cheese, or cooked rice.
Hair loss and scalp problems

Many people having chemotherapy worry about losing their hair. Some people lose all their hair very quickly, others lose it after several treatments, and others may only lose a little hair or no hair at all.

When hair loss does occur, it usually starts 2–3 weeks after the first treatment and grows back when chemotherapy is completed. Your scalp may feel hot or itchy and it may also be tender just before and while your hair starts to fall out.

Although losing head hair is most common, some people may also lose hair from their eyebrows, eyelashes, arms, legs, chest and pubic region.

It takes 4–12 months to grow back a full head of hair. When your hair first grows back, it may be a different colour or curly (even if you have always had straight hair).

In time your hair will return to its normal condition.

Look Good...Feel Better Program

This free program teaches techniques to help restore appearance and self-esteem during treatment. Visit www.lgfb.org.au or call 1800 650 960 for more information.
Keep your hair and scalp very clean.

- Use a mild shampoo like baby shampoo.
- Wear a light cotton turban or beanie to bed if you are cold at night.
- Use a cotton, polyester or satin pillowcase, as nylon can irritate your scalp.
- Make an appointment with a hairdresser, who can make your hair look as good as possible even if it is thin or patchy. However, avoid perms and dyes, and limit the use of hair dryers, rollers and harsh products.
- Wear a wig, toupee, hat, scarf or turban. (See the head scarf pattern on the following page.) Do whatever feels comfortable and gives you the most confidence.
- If your eyelashes fall out, wear glasses or sunglasses to protect your eyes from the sun and dust while outside.

- Comb or brush your hair gently using a large comb or a hairbrush with soft bristles.
- If you prefer to leave your head bare, protect it against sunburn and the cold.
- If you plan to buy a wig, it is a good idea to choose it early in your therapy so you can match the colour and style of your own hair.
- Some hospitals or treatment centres have a wig library where you can borrow a wig if you need one. Ask your doctor or nurse for more information. Otherwise, the Cancer Council Helpline (13 11 20) may be able to help you find a wig.
How to make a head scarf

A head scarf can be a comfortable and attractive way to cover your head if treatment causes hair loss.

- Cut out a triangle, 110 cm by 75 cm by 75 cm, from a piece of material. Soft cotton is a good fabric to use because it doesn’t slip.
- Hem the short edges of the fabric (75 cm) if you wish.
- Attach a piece of foam to help keep the scarf in place by laying a piece of foam (33 cm by 7.5 cm and about 1.25 cm thick) along the long edge. Fold over the fabric and sew in the foam, as shown below.

To wear the scarf, place the foam edge at the front of your forehead and tie the ends of the fabric behind your head. Push the foam edge up, until it is sitting on a comfortable place on your head.

Some people put an old shoulder pad in the front of the scarf to give it some lift.

We thank the Royal North Shore Hospital occupational therapy unit for this pattern.
Itchy skin and other skin problems
Your skin may darken, peel or become dry and itchy when you are having chemotherapy. It may also be more sensitive to the sun.

Protect your skin from the sun – especially between 10am and 3pm – by wearing high-protection sunscreen (SPF 30+), a hat and protective clothing. This should apply to everyone, but it is even more important for people having chemotherapy.

Tips
- Dust cornflour over the itchy parts of your skin.
- Use a moisturising lotion or cream containing the ingredient urea to stop the dryness.
- Wear loose, non-restricting clothing.
- Ask your doctor for advice if using cornflour and lotion doesn’t work.
- If your skin becomes red or sore in the area where the intravenous device went in, tell your doctor or nurse immediately.

Nerve and muscle effects
Some drugs can cause tingling and loss of sensation in the fingers and/or toes, and muscle weakness in the legs. If this happens, tell your doctor or nurse before your next treatment. Your treatment may need to be changed or the problem carefully monitored.

Change in hearing
Some chemotherapy drugs can affect your hearing. They may cause loss of the ability to hear high-pitched sound, and can also cause a continuous ringing noise in the ears known as tinnitus. Let your doctor know if you notice any change in your hearing.
Effects on the blood & immune system

Some chemotherapy drugs affect the bone marrow, which is the soft and spongy material inside the bones. The bone marrow makes three types of blood cells:
- red blood cells – carry oxygen throughout the body and help to prevent anaemia
- white blood cells – fight infection
- platelets – help blood to clot and prevent bruising.

The bone marrow’s job is to maintain normal levels of blood cells (your blood count) to keep you fit and healthy. When chemotherapy affects the bone marrow, your blood count is reduced. The count may fall with each treatment. This may cause some problems, depending on the type of blood cell affected:
- anaemia
- infections
- bleeding problems.

Your health care team will do regular blood tests to make sure your blood cells return to normal before your next treatment.

Anaemia

If your red blood cells are low, anaemia can occur. Having anaemia (being anaemic) can make you look pale and feel weak and tired. You may also feel breathless.

You may need a blood transfusion to build up your red blood cells and treat the anaemia.

Eating a diet with adequate amounts of nutrients, including iron and B vitamins, is also important if you are anaemic. Wholegrain breads and cereals, lean meat and green leafy vegetables are good sources of iron and vitamin B.
Infections
White blood cell numbers may drop during chemotherapy treatment. This can make colds and flu harder to shake off, and scratches and cuts may get infected easily or take longer to heal.

See your doctor if you are unwell – don’t wait out a cold when you’re having chemotherapy. Sometimes doctors recommend taking antibiotics as a precaution against infection. If you are having chemotherapy in winter, check with your doctor about having flu and H1N1 (swine flu) vaccines.

Granulocyte-colony stimulating factor (G-CSF) is a treatment given by injection after chemotherapy. It increases the number of neutrophils, which are a type of white blood cell that help protect against infection. G-CSF is not prescribed for everyone; check with your doctor if it is an option for you. If G-CSF is prescribed, your doctor or nurse will speak to you about possible side effects and ways they can be minimised. Some people may experience bone pain or tenderness at the injection site or show signs of an allergic reaction.

Tips
- Keep a thermometer at home to check your temperature if you feel unwell (see page 28).
- Try to avoid people who are sick. Some people having chemotherapy prefer not to go to crowded places such as shopping centres or public pools to minimise the risk. This is not always practical, so use your commonsense.
- Wash your hands with soap and water before preparing food, eating and after using the toilet.
- Let your doctor know if you are in contact with a person who has chickenpox. You may need an injection to prevent chickenpox or shingles.
When to contact your doctor

Contact your doctor urgently if any of the following occur:

- chills or sweats
- a temperature higher than 38°C
- persistent or severe vomiting more than 24 hours after treatment
- severe abdominal pain, constipation or diarrhoea
- unusual bleeding
- tenderness, redness or swelling around the injection site
- any serious unexpected side effects or sudden deterioration in health.

Also, contact your GP or treating specialist if you experience:

- sweating, especially at night
- sore throat
- mouth ulcers
- burning or stinging on passing urine
- easy bruising.
Bleeding problems
A fall in the number of platelets can cause you to bleed for longer than normal after minor cuts or scrapes, or to bruise more easily. You may need a platelet transfusion if they are low.

- Be careful not to cut or nick yourself when using scissors, needles, knives or razors. Small cuts can harbour germs and can be a good place for an infection to start.
- Clean your teeth with a soft toothbrush to avoid scratching your gums and making them bleed.
- Use an electric razor to minimise the chance of nicking yourself.
- Wear thick gloves when gardening to avoid injury, and to prevent infection from soil, which contains bacteria.
- If you bleed, apply pressure for about 10 minutes and bandage, if appropriate.

Cognitive impairment
Some people say they experience cognitive impairment after chemotherapy. This means they may take more time to process information, experience short-term memory loss, or have trouble concentrating for long periods.

There is some evidence that self-help techniques such as relaxation, physical exercise and memory or focus training can be beneficial. Talk to your doctor if this issue is affecting your day-to-day life.

You may also try focusing on activities that don’t require too much concentration. For example, some people who enjoy reading choose magazines with short articles instead of books with several characters or complex storylines.
Fertility
Chemotherapy may affect sexual organs and functioning in both women and men. This may have a temporary or permanent effect on your ability to have children (your fertility).

It is best for you and your partner to talk to your doctor about how chemotherapy might affect you personally and what options are available if you want to have children in the future. Women may be able to store eggs (ova) and men may have sperm stored before treatment starts for use at a later date.

For women
- Some women’s periods become irregular during chemotherapy but return to normal after treatment.
- For other women, chemotherapy may cause periods to stop completely (menopause).
- After menopause, women can’t have children naturally. The signs of menopause include hot flushes, sweating – particularly at night – and dry skin.
- Early menopause (before age 40) may cause bones to become weaker and break more easily. This is called osteoporosis. Talk to your doctor about medication for relieving the symptoms of menopause.

For men
- Chemotherapy drugs may lower the number of sperm produced and reduce their ability to move. This can sometimes cause infertility, which may be temporary or permanent.
- The ability to get and keep an erection may also be affected but this is normally temporary. If the problem is ongoing, seek medical advice.
Even if you have finished having your family or if you don’t want to have children, your sexuality is important. For more information, read the Cancer Council’s *Sexuality, Intimacy and Cancer* booklet. Call the Helpline for a free copy or visit www.cancercouncil.com.au.

**Contraception**

Although chemotherapy reduces fertility, it is still possible for some women to become pregnant while having chemotherapy and a man having chemotherapy could still make his partner pregnant.

Chemotherapy drugs can harm an unborn baby, so women should not become pregnant during the course of chemotherapy. The type of birth control you choose will depend on what you and your partner are comfortable using. Ask your doctor for advice about the best type of birth control method for you.

Should you or your partner become pregnant, talk to your treating doctor urgently.

Young women may be prescribed the Pill as a contraceptive and to help protect the ovaries from the effects of chemotherapy.

People having chemotherapy are usually advised to use a condom or a female condom if they have sexual intercourse within 48 hours of a treatment session. This is a precaution to protect your partner from any chemotherapy drugs that may be in your body fluids. Talk to your medical oncologist or nurse for more information.
Making treatment decisions

Sometimes it is difficult to decide on the right treatment. You may feel that everything is happening so fast you don’t have time to think things through, but there is usually time to consider what sort of treatment you want.

Waiting for test results and for treatment to begin can be difficult. While some people feel overwhelmed by information, others want as much information as they can find. Making sure you understand enough about your illness, the treatment and its side effects will help you make your own decisions.

• If you are offered a choice of treatments, you need to weigh up their advantages and disadvantages. Consider how important any side effects are to you, especially those that affect your lifestyle.

• If you have a partner, you may want to talk about treatment options with them. You can also talk to friends and family.

• If only one type of treatment is recommended, ask your doctor to explain why other treatment choices have not been offered.

You have the right to accept or refuse any treatment.

Some people with more advanced cancer will choose treatment, even if it only offers a small chance of cure. Others want to make sure the benefits of treatment outweigh any side effects so they have the best possible quality of life. Some people may choose options that don’t try to cure the cancer but make them feel as well as possible.
Talking with doctors

When your doctor first tells you that you have cancer, it is very stressful and you may not remember much. You may want to see the doctor a few times before deciding on treatment.

If your doctor uses medical terms you don’t understand, it’s okay to ask for a simpler explanation. You can also check a word’s meaning in the glossary (see page 52).

Before you see the doctor, it may help to write down your questions. Taking notes or recording the discussion can also help. Many people like to have a family member or friend go with them to take part in the discussion, take notes or simply listen.

If you have been referred to a specialist, they will send a letter to your GP (or another doctor) summarising the diagnosis and reasons for their treatment recommendations. If you want to see this letter, you can ask your specialist.

A second opinion

Getting a second opinion from another specialist may be a valuable part of your decision-making process. It can confirm or clarify your doctor’s recommendations and reassure you that you have explored all of your options. Some people feel uncomfortable asking their doctor for a second opinion, but specialists are used to patients doing this.
Your doctor can refer you to another specialist and send your initial results to that person.

You can get a second opinion even if you have started treatment or still want to be treated by your first doctor. You may decide you would prefer to be treated by the doctor who provided the second opinion.

**Taking part in a clinical trial**

Your doctor may suggest you consider taking part in a clinical trial. Doctors conduct clinical trials to test new or modified treatments to see if they are better than current treatments.

If you are unsure about joining the trial, ask for a second opinion from an independent specialist.

If you decide to join a randomised clinical trial, you will be given either the best existing treatment or a promising new treatment. You will be chosen at random to receive one treatment or the other.

Being part of a trial gives you important rights. You have the right to withdraw at any time; doing so will not jeopardise your treatment for cancer.

You may or may not benefit directly from taking part in a clinical trial, but your participation will benefit future patients.

For more information about clinical trials – such as questions to ask your doctor and how to find a trial that is suitable for you – call the Helpline on 13 11 20 for free information about clinical trials and research.
Treatment costs
Chemotherapy drugs are expensive, but most people only have to pay for a fraction of the cost because many drugs are heavily subsidised by the Pharmaceutical Benefits Scheme (PBS).

There are some drugs that are not subsidised by the PBS, so check with your nurse, specialist or pharmacist about how you will get these drugs and whether you will have to pay for them. You may also have to pay for medications to relieve the side effects of chemotherapy (such as anti-nausea drugs).

If you have private health insurance, you may have to pay for out-of-pocket expenses and contribute to the cost of the drugs. Check with your health fund before you start treatment.
Cancer can cause physical and emotional strain. Eating well, exercising and relaxing may help reduce stress and improve well-being. Addressing changes in your emotions and relationships early on is also very important.

**Healthy eating**

Eating nutritious food will help you keep as well as possible and cope with cancer and treatment side effects. Depending on your treatment, you may have special dietary needs. A dietitian can help you to plan the best foods for your situation – ones that you find tempting, easy to eat and nutritious.

The Cancer Council Helpline can send you information about nutrition, including the free booklet *Food and Cancer.*

**Being active**

You will probably find it helpful to stay active and to exercise regularly if you can. Physical activity – even if gentle or for a short duration – helps to improve circulation, reduce tiredness, decrease joint or muscle pain, and elevate mood. The amount and type of exercise you do will depend on what you are used to, how well you feel and what your doctor advises.

Start by making small changes to your daily activities, such as walking to the shops. If you want to do more vigorous exercise, ask your doctor what is best. This is particularly important if you have osteoporosis (brittle bones), as you are more at risk of bone fractures.
Don’t ignore depression

Treatment and side effects can make you feel depressed. Returning again and again to the hospital or doctor’s office – places that represent the most frightening aspects of cancer – isn’t easy. Changes to your routine, your body, your relationships and your family life can also be overwhelming.

- Talking about your feelings or joining a support group may help (see page 46).
- Spend time with friends who you are comfortable being around, or who have a positive outlook. This may help you reduce negative thinking.
- Be as active as possible. Plan activities for each day, such as exercise, meeting friends or going to the library.
- Do things that make you feel good, such as watching funny movies, going for a walk, having a relaxing bath or massage, or listening to uplifting music.
- Get up at the same time every morning, regardless of how tired you feel.
- If the depression is ongoing, tell your doctor or hospital social worker, as medication or counselling may be useful. There is nothing wrong with seeking professional help for depression – it is just like managing any other medical condition.

You may benefit from contacting beyondblue, an organisation that raises awareness about depression and provides support to people who need it. Call 1300 22 4636 or visit www.beyondblue.org.au.
Tell your doctor about side effects
During treatment, it may be useful to write down any side effects you experience and what you did to cope with them.

Share this information with your doctor or nurse so that they know what is wrong and can try to help you. You health care team can give you suggestions for coping with side effects, prescribe a break in your treatment, or change your treatment, if appropriate.

Try to stop smoking
If you smoke, it's best to try to quit, especially while you are having chemotherapy. Research has shown that people who have never smoked or ex-smokers have a better survival from cancer than people who continue to smoke. Recent studies also suggest that smoking during chemotherapy may reduce the effectiveness of the treatment.

- Talk to your doctor for advice about quitting.
- Try a complementary therapy such as acupuncture or relaxation. Clinical evidence suggests acupuncture may help people who are trying to give up smoking.
- Learn what triggers your desire for a cigarette, such having a coffee, so you can think about ways to deal with the temptation.
- If you miss holding a cigarette, find something else to hold in your mouth or hand, like a drinking straw.
- Ask your friends and family to support your decision.
- Call the Quitline on 13 QUIT (13 7848) for a free Quit Pack and to talk to a quitting adviser. You can also go to the Quitline website, www.quitnow.info.au.
Complementary therapies

Complementary therapies may help you cope better with side effects such as pain. They may also increase your sense of control over what is happening to you, decrease your stress and anxiety, and improve your mood.

There are many types of complementary therapies, including acupuncture, massage, relaxation, yoga, herbal medicine and nutrition. While some cancer treatment centres offer complementary therapies as part of their services, you may have to go to a private practitioner. Ask what’s available at your hospital. Self-help CDs or DVDs can also guide you through some different techniques.

Let your doctor know about any complementary therapies you are using or thinking about trying. This is important, as some therapies may not be appropriate, depending on your conventional treatment. For example, some herbs and nutritional supplements may interact with your medication, resulting in harmful side effects or stopping treatment from working. Massage and exercise therapies may also need to be modified.

Call the Helpline for a free copy of Cancer Council’s CD *Relaxation for People with Cancer* and the publications *Understanding Complementary Therapies* and *Massage and Cancer: an introduction to the benefits of touch*.

Alternative therapies are commonly defined as those used instead of conventional treatments. These therapies may be harmful if people with cancer delay or stop using conventional treatments in favour of them. Examples include high-dose vitamin supplements, coffee enemas and magnet therapy.
Strengthening your relationships

The strong emotions you experience as a result of cancer may affect your relationships. Your experiences may cause you to develop a new outlook on your values, priorities and life in general.

If you feel uncomfortable talking about your feelings, take your time and approach others when you are ready. People usually appreciate insight into how you are feeling and guidance on providing support during and after treatment.

While you are giving yourself time to adjust to cancer, do the same for your friends and family. Everyone will react in a different way – by putting on a happy face, playing down your anxiety, or even ignoring you. They are also adjusting in their own way to changes. If someone’s behaviour upsets you, it will probably help to discuss how you both feel about the situation.

Talk about it

Sharing your thoughts and feelings with your family, friends and work colleagues may strengthen your relationships.

Sexuality, intimacy and cancer

The role of sexuality and intimacy in a person’s life depends on their age, environment, health, relationships, culture, beliefs and interest.

Having cancer can affect your sexuality in both physical and emotional ways. The impact of these changes depends on many factors, such as treatment and side effects, the way you and your partner communicate, and your self-confidence.
Sexual intercourse may not always be possible during or after treatment for cancer, but closeness and sharing are vital to a healthy relationship.

Chemotherapy may cause sexual difficulties, such as:

- feeling too tired or sick to want sex
- feeling less attractive to your partner because of the physical changes to your appearance, such as hair loss
- menopausal symptoms such as vaginal dryness
- difficulties having or maintaining an erection.

Often these difficulties can be managed or overcome. Talk about any physical changes you’ve experienced and how you feel with your partner. Try different positions and practices to find out what feels right for both of you.

For more information call 13 11 20 for a copy of the Cancer Council’s *Sexuality, Intimacy and Cancer* booklet. If you and your partner have ongoing concerns, talk to your doctor or a counsellor, or call the Cancer Council Helpline.

**Changing body image**

Cancer treatment can change the way you feel about yourself (your self-esteem). You may feel less confident about who you are and what you can do. This is common whether your body has changed physically or not.

Give yourself time to adapt to any changes. Try to see yourself as a whole person (body, mind and personality) instead of focusing only on the parts of you that have changed.

For practical suggestions about hair loss, weight changes and other physical changes, call the Helpline.
Life after treatment
You may be surprised to find out that life after cancer treatment can present its own challenges. You will need to take some time to adjust to physical and emotional changes.

You may have mixed emotions. Beforehand, you may have been busy with appointments and focused on treatment, but afterwards you may feel anxious rather than secure. You might worry about every ache and pain and wonder if the cancer is coming back.

Some people say that after cancer they have changed priorities and see life with a new clarity. For example, you may decide to travel, spend more time with family, or do volunteer work.

Although you might feel pressure to return to normal life, it’s important to remember you may not want your life to return to how it was before cancer.

You might find it helpful to:
- take time to adjust to physical and emotional changes
- re-establish a new daily routine at your own pace
- maintain a healthy diet and lifestyle
- schedule regular checkups with your doctor
- share your concerns with family and friends and tell them how to support you
- call the Helpline to connect with other people who have had cancer, or to request a free copy of the booklet *Living Well After Cancer*.

If you have continued feelings of sadness, have trouble getting up in the morning or have lost motivation to do things that previously gave you pleasure, talk to your doctor. You may be clinically depressed, and counselling or medication may help you.
**Living Well After Cancer Program**

Living Well After Cancer is a free community education program run by Cancer Council NSW and trained cancer survivors. It is held throughout NSW.

The program includes practical information and open discussion for people who are cancer survivors, their carers, family, friends and work colleagues.

Participants can:
- discuss changes, challenges and opportunities they may face after completing treatment
- learn how to connect with others
- share tips and ideas about living well after cancer.

Call 1300 200 558 or email livingwellaftercancer@nswcc.org.au for more information.

**What if the cancer comes back?**

For some people, cancer does come back after treatment, which is known as a relapse (recurrence).

Regular checkups allow your doctor to keep an eye on your health and to look for signs that the cancer may be coming back.

If you have a relapse, further treatment can be given – usually using a different combination of chemotherapy drugs from those you had before. This may lead to a second remission.
When you are first diagnosed with cancer, and throughout the different stages of your treatment and recovery, it is normal to experience a range of emotions, such as fear, sadness, anxiety, anger and frustration. If sadness or anxiety is ongoing or severe, talk to your doctor.

It may help to talk about your feelings. Your partner, family members and friends can be a good source of support or you might prefer to talk to:

- members of your treatment team
- a counsellor, social worker or psychologist
- your religious or spiritual adviser
- a support group – see page 46
- the Cancer Council Helpline.

If you need assistance, such as help around the house, it may be hard to tell people what would be useful. Some people prefer to ask a family member or friend to coordinate offers of help.

You may find that while some people you know are supportive, others may not even know what to say to you. Cancer Council’s booklet *Emotions and Cancer* may help if this happens to you.

If you have children, the prospect of telling them that you have cancer can be frightening and unsettling. The booklet *Talking to Kids About Cancer* can help you prepare for this conversation.

Call 13 11 20 for these booklets or download them from www.cancercouncil.com.au.
Practical and financial help

A serious illness often causes practical and financial difficulties. This can add to the stress and anxiety you may already be feeling about having cancer and going through treatment.

Many services are available to help so you don’t have to face these difficulties alone:

- Financial assistance, through benefits and pensions, can help pay for prescription medicines and travel to medical appointments.
- Home nursing care is available through community nursing services or local palliative care services.
- Meals on Wheels, home care services, aids and appliances can make life easier.

To find out more, talk to the hospital social worker, occupational therapist or physiotherapist, or the Cancer Council Helpline. Cancer Council’s booklet Understanding Your Rights may also be useful.

Understanding Cancer program

If you want to learn more about cancer and ways to cope with it, you may find the Cancer Council’s Understanding Cancer program helpful. The program offers practical information and discussions about many issues people experience after diagnosis.

Topics covered include what cancer is, cancer symptoms and side effects, treatment, palliative care, diet, exercise and complementary therapies.

Understanding Cancer programs are held frequently at hospitals and community centres throughout NSW. Call the Helpline for more information.
Talk to someone who’s been there

Getting in touch with other people who have been through a similar experience can be beneficial. There are many ways to contact others for mutual support and to share information.

In these support settings, most people feel they can speak openly, share tips with others, and just be themselves. You will probably find that you feel comfortable talking about your diagnosis and treatment, your relationships with friends and family, and your hopes and fears about the future.

Ask your nurse or social worker to tell you about support groups in your area. Go to www.cancercouncil.com.au or call the Helpline to access the Cancer Services Directory and find out how you can connect with others.

Support services available for patients, carers and family members

- **Face-to-face support groups**, which are often held in community centres or hospitals
- **Online discussion forums** where people can connect with each other any time – see [www.cancerconnections.com.au](http://www.cancerconnections.com.au)
- **Telephone support groups** for certain situations or types of cancer, which trained counsellors facilitate
- **Cancer Council Connect**, a program that matches you with a volunteer who has been through a similar cancer experience, and who understands how you’re feeling.
Caring for someone with cancer

You may be reading this booklet because you are caring for someone with cancer. Being a carer can be very stressful. Try to look after yourself – give yourself some time out and share your worries and concerns with somebody neutral such as a counsellor or your doctor.

Many cancer support groups are open to carers as well as people with cancer. A support group can offer a valuable opportunity to share experiences and ways of coping.

Support services such as Home Help, Meals on Wheels or visiting nurses can help you in your caring role. There are also many organisations and groups that can provide you with information and support, such as Carers NSW. To contact Carers NSW, call 1800 242 636 or visit www.carersnsw.asn.au.

Call the Cancer Council Helpline to find out more about different services or to request a free copy of the booklet Caring for Someone with Cancer.
The Cancer Council Helpline is a telephone information service provided by Cancer Council NSW for people affected by cancer.

For the cost of a local call, you, your family, carers or friends can talk about any concerns and needs confidentially with oncology health professionals. Helpline consultants can send you written information and put you in touch with appropriate services in your area. If you need information in a language other than English, there is a telephone interpreting service available for you.

You can call the Cancer Council Helpline, Monday to Friday, 9am to 5pm.

If you have difficulty communicating over the phone, contact the National Relay Service, a Government initiative to assist people who are hearing and/or speech impaired (www.relayservice.com.au). This service will help you to communicate with a Cancer Council Helpline consultant.
Useful websites

The Internet has many useful resources, although not all websites are reliable. The websites listed below are good sources of information.

**Australian**

Cancer Council NSW ......................... www.cancercouncil.com.au
Cancer Connections.......................... www.cancerconnections.com.au
Cancer Council Australia .................... www.cancer.org.au
Cancer Institute NSW ......................... www.cancerinstitute.org.au
Health Insite ..................................... www.healthinsite.gov.au
Commonwealth Department of
Health and Ageing......................... www.health.gov.au
NSW Health.............................. www.health.nsw.gov.au

**International**

American Cancer Society............... www.cancer.org
Macmillan Cancer Support ............. www.macmillan.org.uk
Following a cancer diagnosis, many people look for information about new types of treatment, the latest research findings, and stories about how other people have coped.

The Cancer Council Library has more than 3,000 resources in the collection, including books, CDs, DVDs, videos and a large range of medical journals.

You can visit the library at 153 Dowling Street, Woolloomooloo (Monday to Friday, 9am to 5pm), borrow by post or ask your local librarian to organise an inter-library loan. Contact the librarian on 13 11 20 or email library@nswcc.org.au.

Related publications

You might also find the following free Cancer Council publications relevant:

- Emotions and Cancer
- Talking to Kids About Cancer
- Caring for Someone with Cancer
- Food and Cancer
- Understanding Radiotherapy
- Overcoming Cancer Pain booklet and DVD
- Relaxation for People with Cancer CD.

Call the Helpline for copies, or download them from www.cancercouncil.com.au/cancerinformation.
You may find this checklist helpful when thinking about the questions you want to ask your doctor about your illness and treatment. If your doctor gives you answers that you don’t understand, it is okay to ask for clarification.

• Why do I need chemotherapy?
• What are the advantages and disadvantages of chemotherapy for me?
• How successful is chemotherapy for my type of cancer?
• Are there any other treatments I can have instead?
• How much does treatment cost?
• What drugs will I be receiving? How will they be given?
• How often will I receive this treatment? How long will I have treatment?
• Where will I have the chemotherapy? Can I have it close to where I live?
• What are the possible side effects of this treatment and what can I do to control them?
• Are there any complementary therapies that will help?
• How will I know if the treatment is working?
• Will chemotherapy affect my sex life and fertility?
• After treatment has finished, will I need checkups?
• Who should I contact for information or if I have a problem during treatment? Who is my after-hours contact?
Glossary

You may come across new terms when reading this booklet or talking to health professionals. You can check the meaning of other health-related words on Cancer Council’s website, www.cancercouncil.com.au/words.

**adjuvant therapy**
A treatment given with or shortly after another treatment to enhance its effectiveness.

**anaemia**
Deficiency in the number or quality of red blood cells in the body.

**angiogenesis**
The formation of new blood vessels. This enables tumours to develop their own blood supply, which helps them survive and grow.

**antibody**
Part of the body’s immune system. Antibodies are proteins made by the blood in response to an invader (antigen) in the body. They help protect against viruses, bacteria and other foreign substances.

**apoptosis**
A type of programmed (normal) cell death. This the body’s normal way of getting rid of damaged, unneeded or unwanted cells.

**benign**
Not cancerous or malignant. Benign lumps are not able to spread to other parts of the body.

**bone marrow**
The soft, spongy material inside bones. Bone marrow contains stem cells that produce red blood cells, white blood cells and platelets.

**cannula**
A plastic tube inserted into a narrow opening (usually a vein) so that fluids can be introduced or removed.

**cells**
The basic organisational unit of all living things. A human is made of millions of cells, which are adapted for different functions.

**central line**
A type of central venous access device used to give direct access to a vein in the chest or neck.
central venous access device (CVAD)
A type of thin plastic tube inserted into a vein. The CVAD gives access to a vein so blood or chemotherapy can be given, and blood can be taken. Types of CVADs include central lines, Hickman lines, peripherally inserted central catheters, and port-a-caths.

chemotherapy
The use of cytotoxic drugs to treat cancer by killing cancer cells or slowing their growth.

cytotoxic
Substances, such as chemotherapy, that are toxic to cells and so kill or slow their growth.

fertility
The ability to conceive a child.

genes
The tiny units that govern the way the body’s cells grow and behave. Genes are found in every cell of the body and are inherited from both parents.

granulocyte-colony stimulating factor (G-CSF)
A protein that helps increase the number and function of certain white blood cells called neutrophils, which help fight infection in the bone marrow.

haematologist
A doctor who specialises in studying and treating diseases of the blood, bone marrow and lymphatic system.

Hickman line
A type of central venous access device inserted into a vein in the chest.

hormone treatment
A treatment that blocks the body’s natural hormones that help cancer grow. Also called hormone therapy.

immunotherapy
The prevention or treatment of disease using substances that alter the immune system’s response. Types include active and passive therapy. Also called biological therapy.
intravenous
Inserted into a vein. Also called IV.

malignant
Cancer. Malignant cells can spread (metastasise) and can eventually cause death if they cannot be treated.

menopause
When a woman stops having periods (menstruating). This can happen naturally (usually around the age of 52 years), because of chemotherapy or hormone treatment, or because the ovaries have been removed.

metastasis
A cancer that has spread from another part of the body. Also known as secondary cancer.

neo-adjuvant therapy
A treatment given before the primary treatment to enhance the primary treatment’s effectiveness.

neutrophil
A type of white blood cell that fights infection in the bone marrow.

oncologist
A doctor who specialises in the study and treatment of cancer.

palliative treatment
Medical treatment for people with advanced cancer to help them manage pain and other physical and emotional symptoms of cancer.

peripherally inserted central catheter
A type of central venous access device that is inserted into a vein in the chest or neck.

platelets
One of three types of cells found in the blood. These help the blood to clot and stop bleeding. Also called thrombocytes.

port-a-cath (port)
A type of central venous access device. A small device with an opening (port) is inserted under skin in the chest or arm.

primary cancer
The original cancer. Cells from the primary cancer may break away and be carried to other parts of the body, where secondary cancers may form.
radiotherapy
The use of radiation, usually x-rays or gamma rays, to kill cancer cells or injure them so they cannot grow and multiply.

red blood cells
One of three types of cells found in the blood. They carry oxygen around the body. Also called erythrocytes.

secondary cancer
A tumour that has spread from the original site to another part of the body. Also called a metastasis.

side effect
Unintended effect of a drug or treatment.

small molecule therapies
Drugs that stop reactions that cause cancer cells to grow.

targeted drug therapy
A type of targeted therapy. Drugs may prevent angiogenesis (blood vessel growth), cause apoptosis (cell death) or block proteins or enzymes telling the cancer to grow.

targeted therapy
Treatment that attacks specific weaknesses of cancer cells while sparing healthy cells. Two types of targeted therapies are drug therapies and immunotherapies.

tissue
A collection of cells that make up a part of the body.

tumour
A new or abnormal growth of tissue on or in the body. A tumour may be benign or malignant.

vaccine
A substance given to stimulate the body’s production of antibodies and provide immunity against a disease.

vein
A blood vessel that takes blood towards the heart.

white blood cells
One of three types of cells found in the blood. They help fight infection. Types of white blood cells include neutrophils, lymphocytes and monocytes. Also called leucocytes.
How you can help

At Cancer Council we’re dedicated to defeating cancer. As well as funding cancer research, we advocate for the highest quality of care for cancer patients and their families and create cancer-smart communities by empowering people with knowledge about cancer, its prevention and early detection. These achievements would not be possible without community support, great and small.

**Join a Cancer Council event:** Join one of our community fundraising events like Daffodil Day, Australia’s Biggest Morning Tea, Relay For Life, Girls Night In and Pink Ribbon Day, or hold your own fundraiser or become a volunteer.

**Make a donation:** Any donation, whether large or small, will make a meaningful contribution to our fight to defeat cancer.

**Buy sun protection products from our retail stores:** Every purchase helps you prevent cancer and contributes financially to our work.

**Help us speak out and create a cancer-smart community:** Cancer Council is a leading advocate for cancer prevention and improved patient services. You can help us speak out on important cancer issues and help us defeat cancer by living and promoting a cancer-smart lifestyle.

**Join a research study:** Cancer Council does research to investigate the causes, management, outcomes and impacts of different cancer types.

To find out more about how you or your family and friends can help, please call your local Cancer Council.
Cancer Council Helpline is a telephone information service provided by Cancer Council NSW for people affected by cancer.

For the cost of a local call (except from mobiles), you can talk about any concerns confidentially with oncology health professionals. Helpline consultants can send you information and put you in touch with services in your area. If you need information in a language other than English, an interpreting service is available.

You can call the Helpline, Monday to Friday, 9am to 5pm.

If you have difficulty communicating over the phone, contact the National Relay Service (www.relayservice.com.au) to help you communicate with a Cancer Council Helpline consultant.

For more information, go to www.cancercouncil.com.au.

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Regional offices

**Central and Southern Sydney**
Woolloomooloo
Ph: (02) 9334 1900

**Central Coast**
Erina
Ph: (02) 4336 4500

**Far North Coast**
Alstonville
Ph: (02) 6627 0300

**Hunter**
Broadmeadow
Ph: (02) 4923 0700

**Mid North Coast**
Coffs Harbour
Ph: (02) 6659 8400

**Northern Sydney**
Crows Nest
Ph: (02) 9334 1600

**North West**
Tamworth
Ph: (02) 6763 0900

**Western**
Orange
Ph: (02) 6392 0800

**Western Sydney**
Parramatta
Ph: (02) 9354 2000

**Southern**
North Wollongong
Ph: (02) 4223 0200

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Cancer Council Helpline 13 11 20

Cancer Council Helpline is a telephone information service provided by Cancer Council NSW for people affected by cancer.

For the cost of a local call (except from mobiles), you can talk about any concerns confidentially with oncology health professionals. Helpline consultants can send you information and put you in touch with services in your area. If you need information in a language other than English, an interpreting service is available.

You can call the Helpline, Monday to Friday, 9am to 5pm.

If you have difficulty communicating over the phone, contact the National Relay Service (www.relayservice.com.au) to help you communicate with a Cancer Council Helpline consultant.

For more information, go to www.cancercouncil.com.au.
For support and information on cancer and cancer-related issues, call Cancer Council Helpline. This is a confidential service.

For further information and details please visit our website: www.cancercouncil.com.au